

# MASS DELIVERY COMMUNICATION SYSTEM

## RELATED APPLICATIONS

This application claims priority under 35 U.S.C. § 119(e) to U.S. Provisional Patent Application No. 60/417,390, which was filed on October 9, 2002. The entire disclosure of this earlier application is hereby incorporated by reference.

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## FIELD OF THE INVENTION

This invention relates generally as indicated to a mass delivery communication system and, more particularly, to a system designed to accommodate the tracking and inspection needs of a mass delivery operation.

## BACKGROUND OF THE INVENTION

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The use of wireless (e.g., cellular) communication systems having mobile devices which wirelessly communicate with a network to track the delivery of items has become commonplace in our society. For example, in the case of mail or packages, a particular item can be tracked from receipt to delivery at its final destination. This tracking information typically can be accessed selectively by the delivery company's administrators, by the customers contracting the delivery, and/or by the intended recipient.

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In a mass delivery situation, the same item is delivered to a large number of sites (i.e., residences or businesses). Typically, a delivery person will drive to a specific region and then hand deliver the item to each residence on the street(s) in this region. In a mass delivery situation, the identification of individual addresses is not important, as every residence on a particular street is a potential delivery location. Also, since the same item is delivered to each home/business, an identification of each item sent to a particular address is not necessary. Consequently, systems which provide individual addresses and/or delivered item

identification are superfluous, inefficient and essentially unworkable in a mass delivery situation.

### SUMMARY OF THE INVENTION

The present invention provides a communication system which is designed  
5 to accommodate the unique needs of a mass delivery situation. More particularly,  
the present invention provides a mass delivery communication system for collecting  
and processing the completion data for an item that is to be mass delivered in a  
predetermined area (e.g., a zip code) comprising a plurality of particular regions  
(e.g., street indexes), each containing a plurality of delivery sites (e.g., residential  
10 homes). The system comprises mobile terminal unit(s) operationally disposed with  
delivery personnel and including a transmitter for wireless transmission of delivery  
data. The processing center is located remote from the mobile terminal unit(s) and  
includes a receiver for receiving the delivery data from the mobile terminal unit.  
The mobile terminal unit(s) receive input regarding completion of delivery in one of  
15 the particular regions and transmit delivery data corresponding to the input to the  
processing center. The processing center is programmed to read, interpret, and  
display delivery data to appropriate parties.

Preferably, the mass delivery communication system comprises a host  
server located remote from the mobile terminal unit(s). The host server is operably  
20 connected to the Internet, and the delivery information is transferred to a website on  
the Internet. A password and/or a user identification may be necessary to access  
the delivery information on the Internet in order to ensure business confidentiality  
and/or for security purposes.

When using the mass delivery communication system, the same item is  
25 delivered to each of a plurality of delivery sites in a first region of the predetermined  
area. The completion of delivery to this area then is input into the mobile terminal  
unit, and this information is wirelessly communicated to the central processor. In  
this manner, administrative personnel can track delivery within this area. Also, the

mass delivery communication system can be used simultaneously in a plurality of predetermined areas (e.g., a plurality of zip codes) to track the overall mass delivery process.

These and other features of the invention are fully described and particularly pointed out in the claims. The following description and annexed drawings set forth in detail a certain illustrative embodiment of the invention, this embodiment being indicative of but one of the various ways in which the principles of the invention may be employed.

### DRAWINGS

Figure 1 is a schematic top plan view of a mass delivery communication system according to the present invention.

Figure 2 is a flow chart of the mass delivery communication system according to the present invention.

### DETAILED DESCRIPTION

Referring now to the drawings in detail, and initially to Figure 1, a mass delivery communication system 10 according to the present invention is schematically shown. The mass delivery communication system 10 collects and processes region completion data for a plurality of the same items 12 that are to be mass delivered in a predetermined area 14 comprising a plurality of particular regions 16, each containing a plurality of delivery sites 18. The system 10 comprises a plurality of mobile terminal units 20 (three terminals 20a, 20b and 20c in the illustrated embodiment) operationally disposed with delivery personnel and a processing center 22 located remote from the mobile terminal unit 12.

The mobile terminal units 20 each include a transmitter 24 for wireless transmission of delivery data, and the processing center 22 includes a receiver 26 for receiving the delivery data from the mobile terminal unit 20. This wireless transmittal can be accomplished, for example, through a wireless data network

and/or a global positioning system (GPS). The mobile terminal units 20 each can also comprise a receiver and the processing center 22 can also comprise a transmitter, whereby the processing center 22 can wirelessly transmit information to the mobile terminal units 22. This further feature might be desirable, for example,  
5 for wirelessly loading a mobile terminal unit 22 with programming for a particular delivery job and/or for transmitting instructions to delivery personnel.

Each of the mobile terminal units 20 are programmed to receive input regarding delivery completion in one of the particular regions 16, and to transmit delivery data corresponding to the input to the processing center 22. The  
10 processing center 22 is programmed to read, interpret, and display delivery data to interested parties. Preferably, the processing center 22 includes a host server 24 located remote from mobile terminal units 20.

The host server 24 can be operably connected to the Internet and the delivery information transferred to a website on the Internet for viewing on a  
15 corresponding device 26. In this manner, the information can be accessed selectively by the delivery company's administrators and/or by the customers contracting the delivery. A password and/or user identification can be necessary to access the delivery information on the Internet in order to ensure business confidentiality and/or for security purposes.

20 Referring now to Figure 2, a method of using the mass delivery communication system is schematically shown. In the illustrated method, each mobile terminal unit 20 comprises a display screen. Delivery personnel input the relevant predetermined area 14 (which can conveniently be a zip code) and the mobile terminal unit 20 displays the particular regions 16 (which can conveniently  
25 be street indexes) within this area. The region 16 whereat delivery was completed is then input, preferably by scrolling down and "clicking" on the relevant region. This completion data is sent then to the processing device 22 which reads, interprets and displays delivery data to interested parties. Specifically, the information is transferred from a host computer 24 to the Internet, and a user

identification and/or password is necessary to access the information at the website.

It may be noted that the mass delivery communication system 10 can be used in a plurality of predetermined areas (e.g., a plurality of zip codes). In this manner, the overall mass delivery process can be observed and tracked by administrative personnel. In fact, in many mass delivery situations only one mobile terminal unit 20 would be necessary per predetermined area (e.g., zip code). That being said, the mass delivery system 10 of the present invention provides the flexibility to divide delivery areas among delivery personnel in the most efficient and economic manner and to take into account such factors as different delivery rates, different delivery vehicles, and/or different delivery densities.

It also may be noted that the mass delivery communication system 10 can determine the predetermined area 14 (e.g., zip code) in ways other than personnel input. For example, if the system 10 uses a global positioning system (GPS), the predetermined area 14 could be determined simply by the location of the mobile terminal unit 20. In this case, delivery personnel simply would push an input causing the unit 20 to provide its location, and this location could be tracked to a predetermined area 14.

One now may appreciate that the present invention provides a route delivery communication system 10 which is designed to accommodate the unique needs of a mass delivery situation. Although the invention has been shown and described with respect to a certain preferred embodiment, equivalent and obvious alterations and modifications will occur to others skilled in the art upon the reading and understanding of this specification. The present invention includes all such alterations and modifications and is limited only by the scope of the following claims.